ERO

Consultants in Natural Resources and the Environment

Natural Resources Assessment
Eagle Rising Subdivision
El Paso County, Colorado

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Contents

Tables

Figures

Appendices

Wetlands and Waters of the U.S.

Background

The Clean Water Act (CWA) protects the chemical, physical, and biological quality of WOTUS. The U.S. Army Corps of Engineers' (Corps) Regulatory Program administers and enforces Section 404 of the CWA. Under Section 404, a Corps permit is required for the discharge of dredged or fill material into wetlands and other WOTUS (streams, ponds, and other waterbodies). On June 22, 2020, the Environmental Protection Agency (EPA) and Corps' Navigable Waters Protection Rule (NWPR) (U.S. Environmental Protection Agency 2020) to define "waters of the United States" became effective in 49 states and in all U.S. territories. A preliminary injunction was granted for Colorado. On March 2, 2021, the United States Court of Appeals for the 10th Circuit vacated the stay on the NWPR in Colorado, thereby ruling the NWPR effective in Colorado. After April 23, 2021, jurisdiction of wetlands and other potential WOTUS in Colorado was to be determined using the NWPR. However, on August 30, 2021, the Arizona District Court remanded and vacated the NWPR. In response, the EPA and Corps have halted implementation of the NWPR and, until further notice, are interpreting WOTUS consistent with the pre-2015 regulatory regime (also referred to as the "Rapanos" guidelines). As such, the identification of WOTUS in this report follows the Rapanos guidelines. Potential rulings and guidance in the future could change the results of this report regarding the jurisdictional status of waters and wetlands in the project area. While ERO may provide its opinion on the likely jurisdictional status of wetlands and waters, the Corps will make the final determination of jurisdiction based on the current rulings.

Under the Rapanos guidelines, the Corps considers traditionally navigable waters (TNWs), wetlands adjacent to a TNW, and tributaries to TNWs that are relatively permanent waters (RPWs) and their abutting wetlands jurisdictional waters. Other wetlands and waters that are not TNWs or RPWs will require a significant nexus evaluation to determine their jurisdiction. A significant nexus evaluation assesses the flow characteristics and functions of a tributary and its adjacent wetlands to determine if they significantly affect the chemical, physical, or biological integrity of downstream TNWs.

Methodology

During the 2022 site visits, ERO surveyed the project area for potential isolated wetlands, jurisdictional wetlands, and other WOTUS. A full jurisdictional wetland delineation following U.S. Army Corps of Engineers (Corps) guidelines was not conducted during the 2022 site visits; however, ERO followed the methods for routine on-site wetland determinations as described in the 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and methods in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0) (Corps 2010) to map existing wetlands and refine changes in wetland boundaries between the 2012 and 2022 site visits,. In the rest of the project area, ERO verified the 2012 delineation boundaries of wetlands, stream channels, and open water in the project area. Before the 2022 site visits, ERO reviewed U.S. Geological Survey quadrangle topographic maps and aerial photography to identify mapped streams and areas of open water that could indicate wetlands or WOTUS. ERO also reviewed

the proximity and potential surface water connection of wetlands to known jurisdictional WOTUS using aerial photo interpretation, landowner information, and information from the 2022 site visit.

The Corps defines wetlands as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (33 Code of Federal Regulations (CFR) 328.2(c)). Wetland boundaries were determined by a visible change in vegetation community, soils, topographic changes, and other visible distinctions between wetlands and uplands. The wetland indicator status of plant species was identified using the *National Wetland Plant List* (Corps 2020), taxonomy was determined using *Flora of Colorado* (Ackerfield 2015), and nomenclature was determined using the *PLANTS Database* (USDA, NRCS 2022).

Intermittent, ephemeral, and perennial drainages with characteristics of a defined streambed, streambank, ordinary high water mark (OHWM), and other erosional features also were identified. The OHWM identifies the lateral jurisdictional limits of nonwetland WOTUS. Federal jurisdiction over nonwetland WOTUS extends to the OHWM, defined in 33 CFR 328.3 as "the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." The Corps defines "stream bed" as "the substrate of the stream channel between the OHWMs. The substrate may be bedrock or inorganic particles that range in size from clay to boulders."

The boundaries of identified wetlands and other characteristics of potential WOTUS were refined using a Trimble Global Positioning System (GPS) unit. Data were differentially corrected using the CompassCom base station. All differential correction was completed using Trimble Pathfinder Office 5.9 software. GPS data were incorporated using ESRI® ArcGIS Desktop software. Additionally, where appropriate, wetlands were drawn on georectified aerials and then digitized.

Wetland Classification

Delineated wetlands were classified according to the U.S. Fish and Wildlife Service's (Service) Cowardin classification system (Cowardin et al. 1979) combined with a hydrogeomorphic (HGM) approach (Brinson 1993). The HGM approach assesses the chemical, physical, and biological functions of wetlands based on its geomorphic setting, water source, and hydrodynamics. HGM classes found in Colorado are mineral soil flats, organic soil flats, riverine, lacustrine fringe, slope, and depressional. The Cowardin classification uses a hierarchical structure of systems, subsystems, and classes to classify both wetlands and deepwater habitats. Wetlands with persistent or nonpersistent vegetation are classified in the Cowardin system as palustrine, which typically includes wetlands referred to as marshes, fens, wet meadows, and sloughs. The palustrine system also includes small, shallow, permanent, or intermittent water bodies such as ponds. Palustrine wetlands may be situated shoreward of lakes and river channels, on river floodplains, in isolated catchments, or on slopes (Cowardin et al. 1979). Under the palustrine

system, wetlands are classified as emergent (erect, rooted, herbaceous, and usually perennial hydrophytes that remain standing until at least the next growing season); scrub-shrub (woody vegetation less than 20 feet tall); or forested (woody vegetation 20 feet or taller). In wetlands where more than one wetland type occurs, the wetland type of the largest area is used. For example, an area that is predominantly palustrine emergent (PEM) wetlands but also contains a small amount of palustrine scrub-shrub (PSS) wetlands would be categorized as PEM wetlands. Because of the limited occurrence of the smaller sized wetland types within the larger wetland polygons, these areas were not separated out within the delineated polygons.

The Cowardin riverine system includes wetlands and deepwater habitats contained in a channel, with the exception of wetlands dominated by trees, shrubs, and emergent vegetation. The riverine system usually contains flowing water and is bounded on the landward side by uplands, channel banks, or other wetlands. Within the riverine system, wetlands are divided into the tidal lower perennial (low gradient and slow water), upper perennial (high gradient and fast water), and intermittent subsystems. Within these subsystems, riverine wetlands are further classified as unconsolidated bottom, aquatic bed, streambed, rocky shore, unconsolidated shore, and emergent wetland (nonpersistent). During the wetland assessment, ERO classified the wetlands in the project area as PEM. Open waters/drainages were classified as intermittent in defined areas along Cottonwood Creek and as Palustrine unconsolidated bottom in Ponds 1, 2, and 3.

Jurisdictional Assessment

To assist the Corps in making a preliminary jurisdictional determination, ERO reviewed the proximity and potential surface water connection of wetlands to known jurisdictional waters of the U.S. using aerial photo interpretation and information from the wetland assessment. Within the project area, wetlands were distinguished as isolated, abutting or adjacent to a TNW, or as abutting or adjacent to a tributary to a TNW. Abutting wetlands are not separated from a TNW or tributary by uplands, a berm, a dike, or similar feature. Adjacent wetlands are bordering, contiguous, or neighboring a TNW or tributary, and may be separated from a TNW or tributary by uplands, a berm, a dike, or similar feature. Wetlands or waters that have a surface water connection to the South Platte River may provide more than a speculative or insubstantial effect on the chemical, physical, and/or biological integrity of a TNW. While ERO may provide its opinion on the likely jurisdictional status of wetlands and waters, the Corps will make the final determination of jurisdiction based on the current rulings. The following sections contain information on potential surface water connections of wetlands and other waters in the project area.

Description of Wetlands and Other Waters

ERO assessed the project area for wetlands and other waters as described below. Data were collected in locations in the project area to document and verify the characteristics of uplands and wetlands, and the transition areas between them. Each data point (DP) was given a label that corresponds to a location shown on Figure 2 and routine wetland determination forms in Appendix B. The following sections contain information on potential surface water connections of wetlands and other waters in the project area. Table 1 provides a summary of the mapped areas, including Cowardin classification and

HGM for each wetland. During the 2022 site visit, ERO mapped approximately 1.29 acre of stream channel and open water and 5.47 acres of wetlands in the project area (Figure 2; Table 1).

Table 1. Wetland area, Cowardin classification and HGM.

Water/Wetland ID	Longitude	Latitude	Feature Size (acre)	Cowardin Classification	HGM
Streambed and Open Water					
Pond 1 (Cottonwood Creek)	-104.687376	38.978183	0.86	Palustrine	Riverine/Depression
Pond 2 (Cottonwood Creek)	-104.688763	38.973141	0.28	Palustrine	Riverine/Depression
Pond 3 (Isolated)	-104.689824	38.976631	0.15	Palustrine	Depression
Total Streambed and Open Water			*1.29*	-	-
Wetlands					
Wetland 1	-104.687513	38.978655	0.54	Palustrine Emergent	Riverine
Wetland 2	-104.688002	38.975189	4.18	Palustrine Emergent	Riverine
Wetland 3	-104.688288	38.972562	0.43	Palustrine Emergent	Riverine
Wetland 4	-104.690057	38.974356	0.11	Palustrine Emergent	Slope
Wetland 5	-104.689908	38.976630	0.21	Palustrine Emergent	Depression
Total Streambed and Open Water			*5.47*	-	-
Total			**6.76**	-	-

Streams, Open Water, and Wetlands

Cottonwood Creek and Ponds 1 and 2

Cottonwood Creek is shown as an intermittent stream on the U.S. Geological Survey (USGS) Falcon NW topographic quadrangle and NHD (Figure 1). Cottonwood Creek is a tributary to Fountain Creek which flows to the Arkansas River, a TNW, and therefore, is likely a water of the U.S. The Cottonwood Creek channel is 1 to 3 feet wide and almost completely vegetated in the project area. In 2012, ERO mapped wetlands nearly throughout Cottonwood Creek and along the pond fringes in the project area; however, based on conditions during the 2022 field survey, approximately 375 feet of Cottonwood Creek upstream of Pond 1 appear to have transitioned to uplands. During the 2022 site visit, no defined channel bed and bank, surface flows, or wetlands were observed along this reach of Cottonwood Creek. Two man-made ponds (Ponds 1 and 2) occur along Cottonwood Creek in the project area. Both ponds are bounded by earthen dams but appear to be connected downstream to Cottonwood Creek via culverts.

Wetlands 1 through 3

As discussed above, the Cottonwood Creek channel consists of wetlands (Wetlands 1, 2, and 3) throughout most of the project area in fringes around Ponds 1 and 2 (Figure 2). Compared to what was mapped in 2012, less open water in Ponds 1 and 2 and wetland fringes surrounding the ponds were observed in 2022. Additionally, in 2012, wetlands were mapped further upstream in the project area along Cottonwood Creek and its tributaries; however, during the 2022 site visit, ERO collected data along these areas to verify they had transitioned to uplands (DP1 through DP3, and DP5).

Vegetation

Cottonwood Creek is almost completely vegetated with emergent wetland species throughout the project area. Wetlands also occur as fringes along Ponds 1 and 2. Wetland vegetation is dominated by

sandbar willow (facultative wetland); Baltic rush (facultative wetland); Nebraska sedge (obligate wetland), and broadleaf cattail (obligate wetland). Other common species observed include softstem bulrush (obligate wetland), reed canarygrass (*Phalaris arundinacea*; facultative wetland), watercress (*Nasturtium officinale*; obligate wetland), and redtop (facultative). At DP4, in Wetland 2, the vegetation met the dominance test for hydrophytic vegetation.

The vegetation along the tributaries were transitioning from hydrophytic species to mesic or upland species, and there was a noticeably loss of hydrology. These areas were dominated by redtop, Kentucky bluegrass (*Poa pratensis*; facultative), Canada thistle (facultative), Canada wildrye (facultative), and yellow toadflax (*Linaria vulgaris*; upland). At DP1, DP2, and DP3 met the dominance test for hydrophytic vegetation; however, these data points then lacked either hydric soils or hydrology indicators and, therefore, were not wetlands. DP5 consisted primarily of upland species and did not meet the dominance test for hydrophytic vegetation.

Soils

Soil types in the project area had been identified by the NRCS Soil Surveys for El Paso County, Colorado. The NRCS mapped the primary soil in the project area as Pring coarse sandy loam (3 to 8 percent slopes) (USDA, NRCS 2022b). These soils are mostly coarse sandy loam or gravelly sandy loam, which are well-drained soils typically found on hills and side slopes.

Field observations revealed that soils primarily consisted of clay loam and sandy or gravelly clay loam within 16 inches of the ground surface. At DP1, the soils contained matrix colors of 10YR 2/2 and 10YR 2/2 with redox features of 7.5YR 4/6. At DP1, soils met the redox depressions soil indicator. No hydric soil indicators were observed at DP2 or DP3. Soils at DP4 were assumed hydric based on the presence of hydrophytic vegetation and hydrology indicators. Nonhydric soils were assumed at DP5 due to a lack of hydrophytic vegetation and wetland hydrology indicators. See Appendix B for additional details on soils for each DP.

Hydrology

Hydrology indicators were observed at DP3 and DP4. Two secondary hydrologic indicators including a successful FAC-neutral test and geomorphic position were observed at DP3. At DP4, the surface water primary hydrologic indicator was observed, as well as the secondary indicators of a successful FAC-neutral test and geomorphic position. Geomorphic position, a secondary indicator, was observed at DP1, DP2, and DP5; however, no other hydrology indicators were present; therefore, these areas were determined not to be a wetland.

Wetland 4

In the project area, a slope wetland (Wetland 4) occurs west of Cottonwood Creek, northwest of Pond 2 (Figure 2). The wetland occurs downstream of a stormwater culvert that outlets under a gravel road. Water was also observed seeping into the wetland from a leaking waterline pipe spout. The wetland slopes to the southeast toward Cottonwood Creek; there is an approximately 180 feet break between Wetland 4 and Pond 2 that consists of an upland vegetated swale with intermittent riprap. Wetland 4 is

not shown on the USGS Falcon NW topographic quadrangle or the NHD. During the 2022 site visit, no surface flows or wetlands were observed connecting Wetland 4 to Cottonwood Creek or its adjacent wetlands; however, there may be a significant nexus between these features. As such, ERO believes Wetland 4 would likely be considered jurisdictional.

Vegetation in Wetland 4 is similar to the wetland vegetation observed along portions of Cottonwood Creek in the project area and consisted primarily of Baltic rush with some sandbar willow. Wetland boundaries were identified by abrupt vegetation changes from the wetland community to areas dominated by upland species.

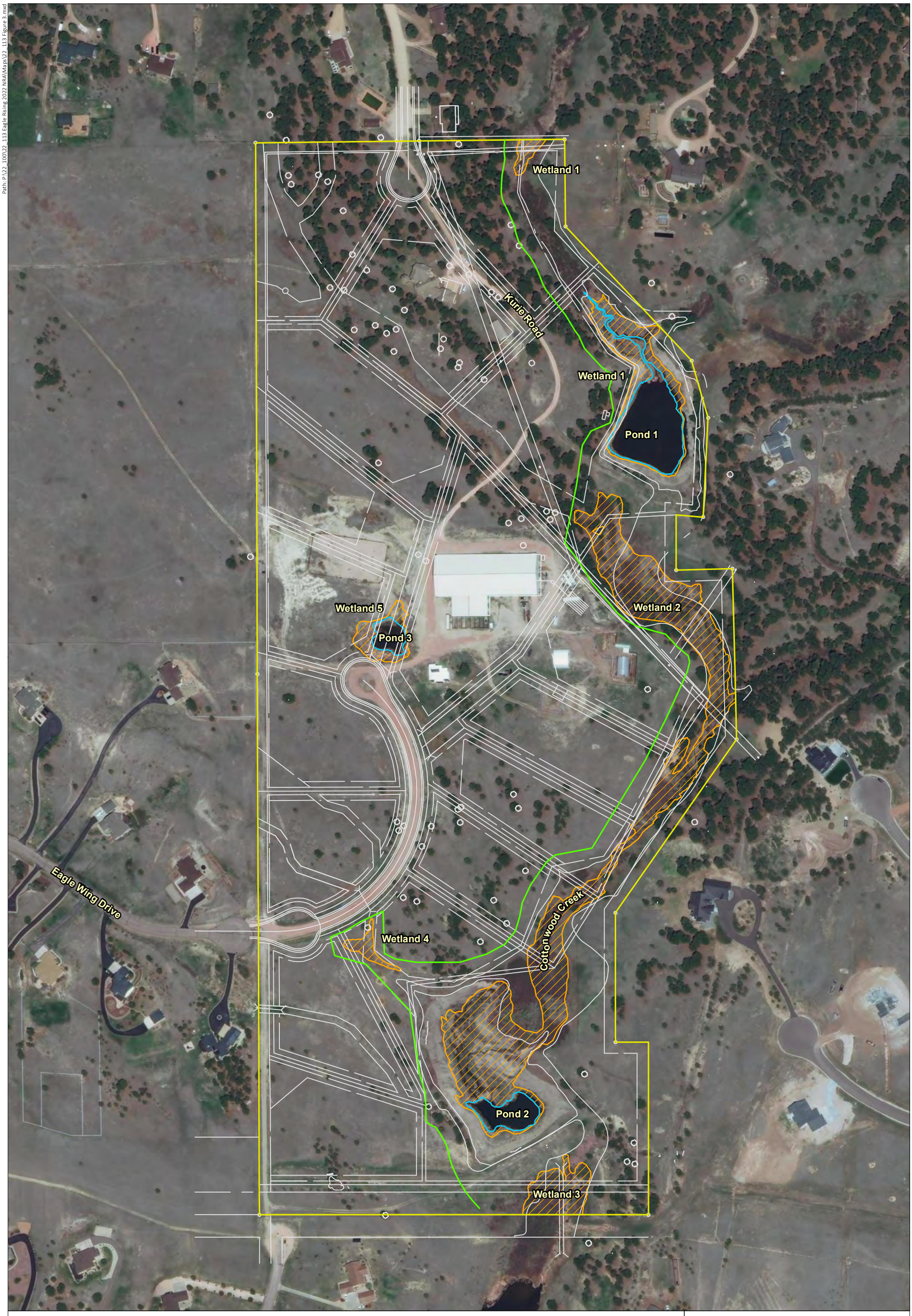
Pond 3 and Wetland 5

A small pond (Pond 3) occurs within the disturbed uplands in the project area. The pond is not shown on the USGS Falcon NW topographic quadrangle or the NHD. Pond 3 is man-made and excavated in uplands and no culvert outlet is present. Wetland vegetation (Wetland 5), dominated by broadleaf cattail, occurs along the pond margins. Because Pond 3 and adjoining Wetland 5 appear to be isolated without a significant nexus to know waters of the U.S., ERO believes these features would be considered nonjurisdictional.

Recommendations

Cottonwood Creek, Ponds 1 and 2, and their abutting wetlands would likely be considered jurisdictional waters of the U.S. because of their connection to the Arkansas River, a TNW. It is unclear if Wetland 4 would be considered isolated or if they have a significant nexus to Cottonwood Creek. Pond 3, and its associated Wetland 5, appear to lack a significant nexus to any known water of the U.S. and, therefore, may be considered isolated and nonjurisdictional. ERO has recommended a “No Build Zone” for the project area based on topography and vegetation and hydrology characteristics of the project area (Figure 3). The project proponent incorporated this recommendation in their preliminary plan and has established a “prudent line – no construction disturbance limit” that avoids and protects both wetlands and riparian vegetation, except for Pond 3 and its associated wetlands (Wetland 5). ERO recommends submitting a wetland delineation report to the Corps requesting confirmation of the delineation and a preliminary jurisdictional determination for Pond 3 and Wetland 5. If the wetlands and open waters are determined jurisdictional, any work that would require the placement of dredged or fill material into the waters or wetlands would require a Section 404 permit.

Path: P:\22_100\22_113 Eagle Rising 2022 NRA\Maps\22_113 Figure 3.mxd



Eagle Rising 2022 Natural Resources Assessment

Open Water

Wetland

Construction/Disturbance Limit

Project Area Boundary

Image Source: Maxar Technologies©, May 24, 2021

0 120 240 Feet

N

Figure 3
Proposed Subdivision

Prepared for: Steve Jacobs
File: 22_113 Figure 3.mxd (GS)
June 21, 2022

ERO Resources Corp.

Threatened, Endangered, and Candidate Species

ERO assessed the project area for habitat for threatened, endangered, and candidate species under the Endangered Species Act (ESA). Federally threatened and endangered species are protected under the ESA of 1973, as amended (16 United States Code (U.S.C.) 1531 et seq.). Significant adverse effects on a federally listed species or its habitat require consultation with the Service under Section 7 or 10 of the ESA. The Service's Information for Planning and Consultation (IPaC) resource list for the project area identifies several threatened and endangered species that could be potentially affected by the project (Table 2) (Service 2022a).

Table 2. Federally threatened, endangered, and candidate species potentially found in in the project area or potentially affected by the project.

Common Name	Scientific Name	Status[1.]	Habitat	Suitable Habitat Present
Mammals				
Preble's meadow jumping mouse[2.]	*Zapus hudsonius preblei*	T	Shrub riparian/wet meadows	No, not within Preble's range.
Gray wolf	*Canis lupus*	E	Wolves can thrive in a wide range of habitats; a highly adaptable species that occurs in temperate forests, mountains, and grasslands	No - this species does not currently occur in Douglas County and project activities would not result in appreciable take
Birds				
Eastern black rail	*Laterallus jamaicensis*	T	Shallow cattail wetlands and wet sedge meadows with dense cover in the Arkansas River drainage in southeastern Colorado and the Republican River in east-central Colorado	Yes
Piping plover[3.]	*Charadrius melodus*	T	Sandy lakeshore beaches, river sandbars	No - not in South Platte River Basin
Fish				
Greenback cutthroat trout	*Oncorhynchus clarki stomias*	T	Cold, clear, gravel headwater streams and mountain lakes	No
Pallid sturgeon[3.]	*Scaphirhynchus albus*	E	Large, turbid, free-flowing rivers with a strong current and gravel/sand substrate	No - not in South Platte River Basin
Invertebrates				
Monarch butterfly	*Danaus plexippus*	C	Dependent on milkweeds (*Asclepiadoideae*) as host plants and forage on blooming flowers; a summer resident	No

Common Name	Scientific Name	Status[1.]	Habitat	Suitable Habitat Present
Plants				
Ute ladies'-tresses orchid	*Spiranthes diluvialis*	T	Moist to wet alluvial meadows, floodplains of perennial streams, and around springs and lakes below 7,800 feet in elevation	No
Western prairie fringed orchid[3.]	*Platanthera praeclara*	T	Moist to wet prairies and meadows	No - Not in So. Platte Basin

*T = Federally Threatened Species, E = Federally Endangered Species; C – Candidate for Federal Listing; EXPN = Experimental Population.
**Water depletions in the South Platte River may affect the species and/or critical habitat in downstream reaches in other counties or states.
Source: (Service 2022a).

Species Eliminated from Further Consideration

The proposed project would not affect the gray wolf, greenback cutthroat trout, or monarch butterfly because the project area is outside of the known range of the species and lacks suitable habitat. The piping plover, pallid sturgeon, and western prairie fringed orchid are species that are affected by continued or ongoing water depletions to the Platte River system. Cottonwood Creek is a tributary to the Arkansas River and therefore no action is necessary regarding these species. The project area is within the range of ULTO, but does not meet the 1992 survey requirements because the site is above the elevation range. Furthermore, Cottonwood Creek does not meet the 1992 survey requirements because it is an intermittent stream (only perennial tributaries in El Paso county need surveyed); therefore, no action is necessary regarding this species. Potential habitat for Preble's and eastern black rail is present in the project area and a more detailed discussion is provided below.

Threatened and Endangered Species Habitat

Preble's Meadow Jumping Mouse

Species Background

Preble's is listed as a threatened species in Colorado. Under existing regulations, either a habitat assessment or a full presence/absence survey for Preble's is required for any habitat-disturbing activity within areas determined to be potential Preble's habitat (generally stream and riparian habitats along the Colorado Front Range). Typically, Preble's occurs below 7,600 feet in elevation, generally in lowlands with medium to high moisture along permanent or intermittent streams and canals (Meaney et al. 1997). Preble's occurs in low undergrowth consisting of grasses and forbs, in open wet meadows, riparian corridors near forests, or where tall shrubs and low trees provide adequate cover (Service 1999; Meaney et al. 1997). Preble's typically inhabits areas characterized by well-developed plains riparian vegetation with relatively undisturbed grassland and a water source nearby.

Potential Habitat and Possible Effects

Although the project area is currently considered outside the range of Preble's (Service 2022), ERO assessed the project area for vegetation characteristics similar to Preble's habitat. Cottonwood Creek

and its adjacent wetlands and riparian corridor support vegetation with characteristics similar to those described as suitable Preble's habitat. This potentially suitable habitat was mapped during the 2012 and 2022 site visits (Figure 2). Most of the wetland areas described above and the adjacent uplands provide vegetation structure and composition that is characteristic of Preble's breeding, wintering, and foraging habitat. However, the project area is completely surrounded by suburban development and fragmented from other suitable habitat both upstream and downstream by human dwellings, roads, and small culverts. The habitat characteristics along this segment of Cottonwood Creek appears to have been influenced by a series of small earthen dams and ponds that hold water, raise ground water tables in the immediate vicinity, and provide the hydrology capable of supporting woody riparian vegetation. Less than 1.5 miles downstream, at Black Forest Road, Cottonwood Creek abruptly becomes incised and severely eroded with steep unvegetated banks incapable of supporting riparian vegetation or Preble's populations.

A trapping survey was conducted on the Highlands Property to the south and east of the project area and no Preble's were found (Service 2000). Several other habitat evaluations and a trapping survey have been conducted downstream of the project area along Cottonwood Creek with no Preble's or suitable habitat found (Feature Homes, Inc. 2002; Ensight Technical Services, Inc. 1999). In addition, the closest known population of Preble's is more than 6 stream miles downstream of the project area along Cottonwood Creek.

Recommendations

Current guidelines recommend that projects within 300 feet of 100-year floodplains on drainages that are potential Preble's habitat be assessed as to their potential to impact Preble's and its habitat (Service 1999). ERO has determined that vegetation characteristic of suitable Preble's habitat is present in the project area, although the project area is unlikely to support a viable population of the species due to existing human disturbance in and surrounding the project area and isolation from other suitable habitat or known populations. ERO has recommended a "No Build Zone" for the project area based on topography and actual vegetation characteristics of the project area. The project proponent incorporated this recommendation in their preliminary plan and has established a "prudent line – no construction disturbance limit" that avoids and protects both wetlands and riparian vegetation (Figure 3).

Based on the information provided above the absence of nearby suitable habitat or existing Preble's populations and the designation of a no construction disturbance limit, ERO has determined that the proposed project is unlikely to adversely affect Preble's or its habitat.

ERO recommends submitting a habitat assessment letter to the Service requesting that the Service disqualify the Eagle Rising Subdivision for consideration under the provisions of the ESA.

Eastern Black Rail

Species Background

The eastern black rail was listed as a threatened species by the Service on October 8, 2020 under the ESA (see Federal Register Vol. 85, No. 196:63764-63803). The eastern black rail ranges throughout central and eastern North America and south through the Caribbean and Brazil. This species has been documented along the Arkansas River drainage in southeastern Colorado and the Republican River in east-central Colorado. Threats include habitat fragmentation and conversion resulting in the loss of wetland habitats; sea level rise and tidal flooding; land management practices (e.g., incompatible fire management practices, grazing, haying/mowing, and other mechanical treatment activities); and increasing storm intensity and frequency. There are no exact counts of eastern black rail populations at the present time, so analysis units based on habitat have been identified across the United States. Colorado is included in the Great Plains analysis unit (Service 2019).

The eastern black rail is dependent on wetland and marsh vegetation that contains a mix of wet, saturated, and some dry edges around the periphery. The subspecies requires dense overhead cover and soils that are moist to saturated (occasionally dry) and interspersed with or adjacent to very shallow water (Service 2019). In Colorado, this species has been documented in cattail/bullrush marshes and near pond edges. Along the Republican River in northeastern Colorado and western Kansas, the eastern black rail has been documented in riparian vegetation (U.S. Air Force Academy 2020).

Potential Habitat and Effects

The project area contains herbaceous emergent wetland vegetation along Cottonwood Creek that may be considered suitable for the eastern black rail; however, ERO evaluated the project area and determined the proposed project would not likely adversely affect eastern black rail habitat because the project area is completely surrounded by residential development and the presence of emergent wetland vegetation is a relatively recent occurrence related to water rights negotiations.

Recommendations

ERO has recommended a “No Build Zone” for the project area based on topography and actual vegetation characteristics of the project area. The project proponent incorporated this recommendation in their preliminary plan and has established a “prudent line – no construction disturbance limit” that avoids and protects both wetlands and riparian vegetation (Figure 3). ERO recommends submitting a habitat assessment letter to the Service requesting that the Service disqualify the Eagle Rising Subdivision for consideration under the provisions of the ESA.

Other Species and Habitats of Concern

Raptors and Migratory Birds

Species Background

Migratory birds, as well as their eggs and nests, are protected under the MBTA. The MBTA does not contain any prohibition that applies to the destruction of a bird nest alone (without birds or eggs),

provided that no possession occurs during the destruction. While destruction of a nest by itself is not prohibited under the MBTA, nest destruction that results in the unpermitted take of migratory birds or their eggs is illegal and fully prosecutable under the MBTA (Service 2003). The regulatory definition of a take is to pursue, hunt, shoot, wound, kill, trap, capture, or collect; or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect (50 CFR 10.12).

Under the MBTA, the Service may issue nest depredation permits, which allow a permittee to remove an active nest. The Service, however, issues few permits and only under specific circumstances, usually related to human health and safety. Obtaining a nest depredation permit is unlikely and involves a process that takes, at a minimum, 8 to 12 weeks. The best way to avoid a violation of the MBTA is to remove vegetation outside of the active breeding season, which typically falls between March and August, depending on the species. MBTA enforcement actions are typically the result of a concerned member of the community reporting a violation.

CPW maintains a leadership role with respect to raptor management in Colorado; however, the primary authority for the regulation of take and the ultimate jurisdiction for most of these species rests with the Service under the MBTA and the Eagle Act (16 United States Code 668-668c).

Potential Habitat and Possible Effects

ERO did not observe any active or inactive songbird nests in the project area; however, trees and shrubs in and adjacent to the project area are potential nesting habitat for migratory birds. Additionally, no raptor nests were observed in or near the project area during the 2012 or 2022 site visit. A wide variety of bird species may use different vegetation communities in the project area for shelter, breeding, wintering, and foraging at various times during the year. The breeding season for most birds in Colorado is March through August, with the exception of a few species that begin breeding in February, such as great-horned owls.

Recommendations

Although no nests were observed during the 2022 site visit, ground and arboreal nests are difficult to detect and may be present in the project area. To avoid destruction of potential migratory bird nests, vegetation removal should be conducted outside of the April 1 through August 31 breeding season.

Both the Service's Eastern Colorado Field Office (Service 2022c) and the Colorado Department of Transportation (Colorado Department of Transportation 2011) have identified the primary nesting season for migratory birds in eastern Colorado as occurring from April 1 through August 31. However, a few species such as bald eagles, great horned owls, and red-tailed hawks can nest as early as December (eagles) or late February (owls and red-tailed hawks). Because of variability in the breeding seasons, ERO recommends that a nest survey be conducted within one week prior to construction to determine if any active nests are present in the project area so that they can be avoided. Additional nest surveys during the nesting season may also be warranted to identify active nesting species that may present additional development timing restrictions (e.g., eagles or red-tailed hawks).

If active nests are identified in or near the project area, activities that would directly affect the nests should be restricted. Habitat-disturbing activities (e.g., tree removal, grading, scraping, and grubbing) should be conducted in the nonbreeding season to avoid disturbing active nests or to avoid a "take" of the migratory bird nests in the project area. Nests can be removed during the September 1 through March 31 nonbreeding season to preclude future nesting and avoid violations of the MBTA. There is no process for removing nests during the nonbreeding season; however, nests may not be collected under MBTA regulations. If the construction schedule does not allow vegetation removal outside of the breeding season, a nest survey should be conducted immediately prior to vegetation removal to determine if the nests are active and by which species. If active nests are found, any work that would destroy the nests or cause the birds to abandon young in the nest cannot be conducted until the birds have vacated the nests.

Other Wildlife Considerations

The project area provides habitat for a variety of small mammals such as cottontail rabbits (*Sylvilagus* sp.), deer mice, voles, and pocket gophers. Grassland habitat likely provides breeding habitat for numerous ground-nesting prairie bird species, and riparian ecosystems typically support many more species of native birds than surrounding grassland or shrubland communities (Knopf and Samson 1994). Although influenced by human disturbance, Cottonwood Creek and the ponds appear to support a relatively permanent water source, the wetlands and riparian corridor provides protective cover, foraging, and nesting habitat for wildlife and birds. Additionally, Cottonwood Creek and its riparian corridor extends through the project area and nearby development areas to the southwest and likely provide foraging, sheltering, and dispersal habitat components for numerous species.

As with any human development, wildlife species sensitive to human disturbance are likely to decline in abundance or abandon the area, while other wildlife species adapted to development are likely to increase in abundance. Overall, surrounding and continuing development contributes to a decline in the number and diversity of wildlife species nearby and to a change in species composition to favor species that adapt better to human disturbance.

Conclusions

The existing vegetation communities and topographical features in the project area provide contiguous habitat, water resources, and core wildlife values such as cover and forage for various wildlife species. In particular, the drainage corridors along Cottonwood Creek contribute to the overall diversity of the project area and provide wildlife movement passageways that help maintain connections between wildlife populations. The project proponent plans to preserve the drainages, which will help maintain and conserve the wildlife values of the project area. Additionally, conserving larger contiguous parcels and concentrating building envelopes would provide a greater value to wildlife than numerous smaller parcels.

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Appendix A Photo Log

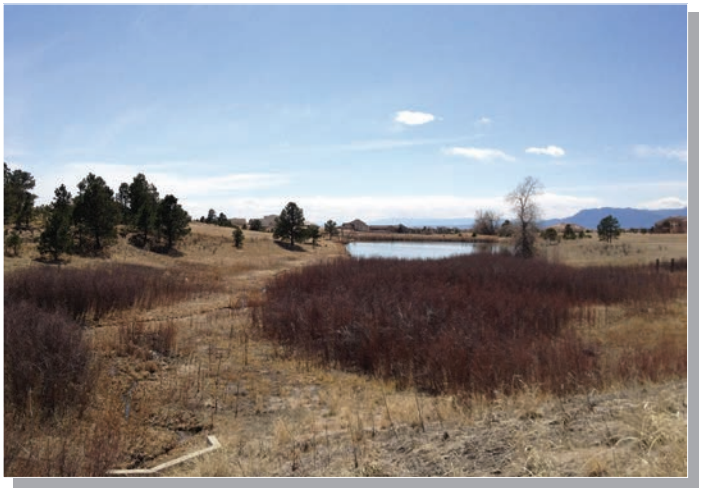

Photo 1a - Cottonwood Creek at the southern boundary of the project area. View is to the south.

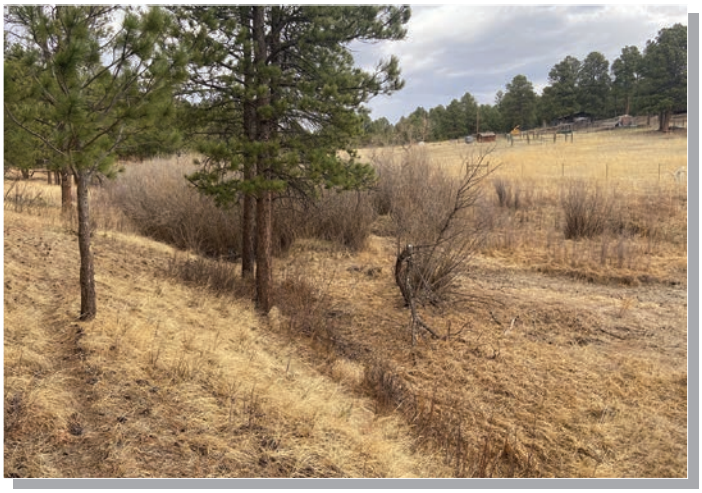

Photo 1b - Cottonwood Creek at the southern boundary of the project area. View is to the south.

Photo 2a - Wetlands along Cottonwood Creek in the project area. View is to the south.

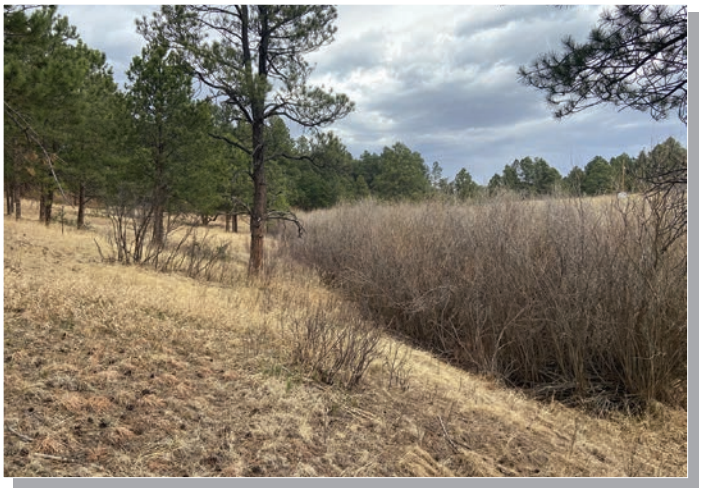

Photo 2b - Wetlands along Cottonwood Creek in the project area. View is to the south.

Photo 3a - Pond 1 in the project area. View is to the east.

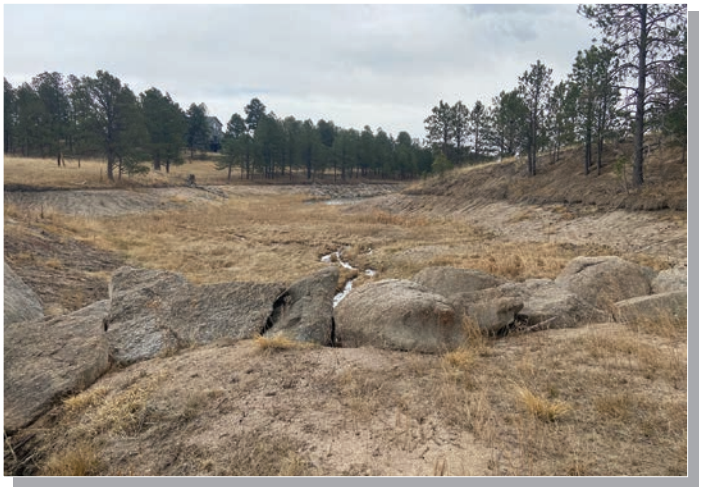

Photo 3b - Immediately upstream of Pond 1 in the project area. View is to the east.

Photo 4a - Pond 2 in the project area.
View is to the northwest.

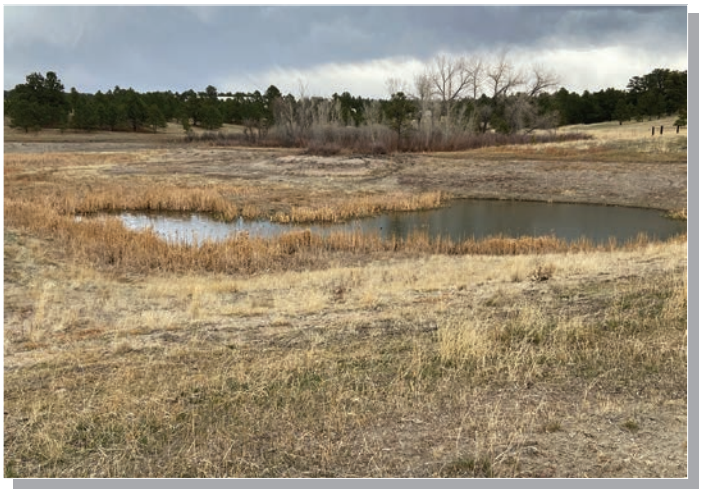

Photo 4b - Pond 2 in the project area.
View is to the northwest.

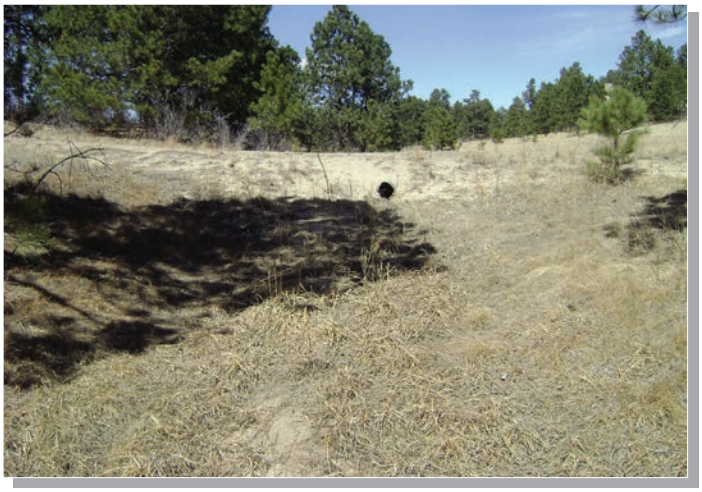

Photo 5a - Vegetated swale upstream of Cottonwood Creek in the project area. View is to the northwest.

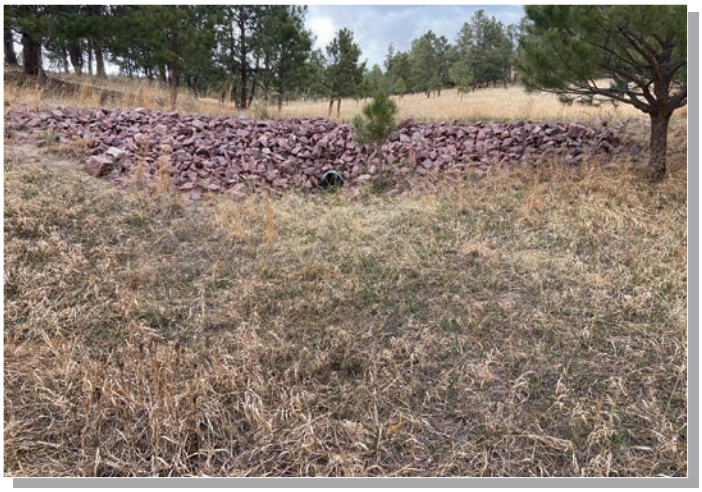

Photo 5b - Vegetated swale upstream of Cottonwood Creek in the project area. View is to the northwest.

Photo 6a - Pond 3 in the project area.
View is to the northwest.

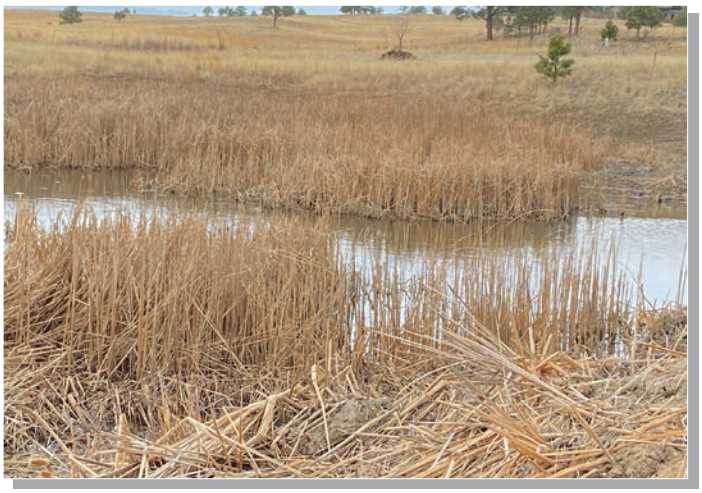

Photo 6b - Pond 3 and associate Wetland 5 in the project area.
View is to the northwest.

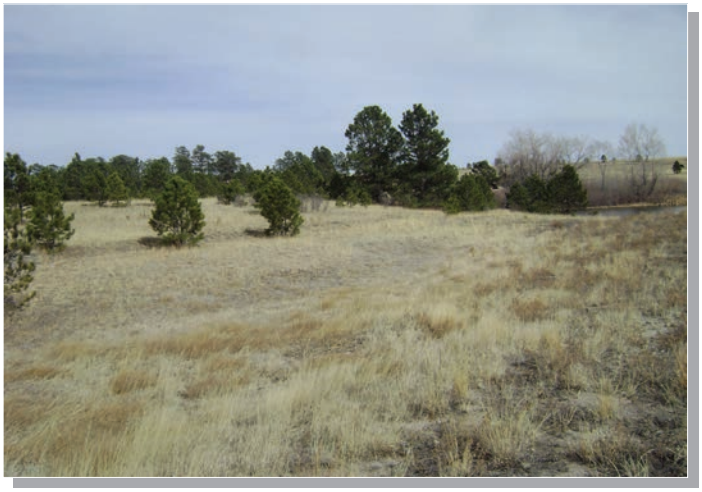

Photo 7a - Wetland 9 in the project area.
View is to the southeast.

No photo taken in 2022

Photo 7b - Wetland 9 in the project area.
View is to the southeast.

Photo 8a- Disturbed uplands and barn in the project area.
View is to the northeast.

No photo taken in 2022

Photo 8b - Disturbed uplands and barn in the project area.
View is to the northeast.

Photo 9a - Native uplands in the project area.
View is to the northeast.

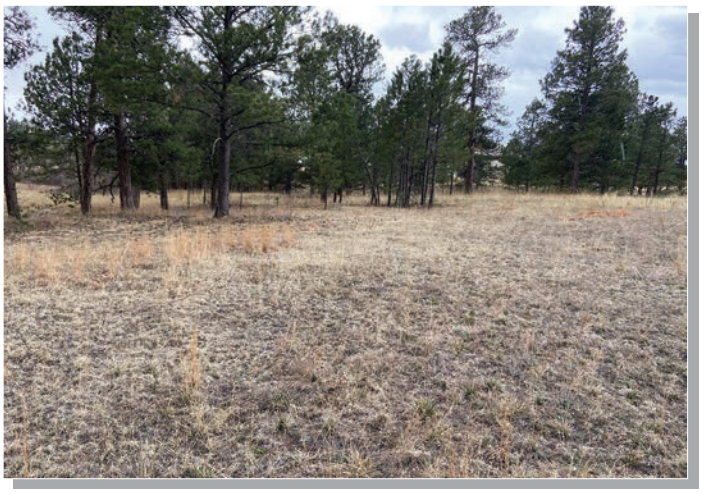

Photo 9b - Native uplands in the project area.
View is to the northeast.

Photo 10a - Riparian corridor in the project area.
View is to the southeast.

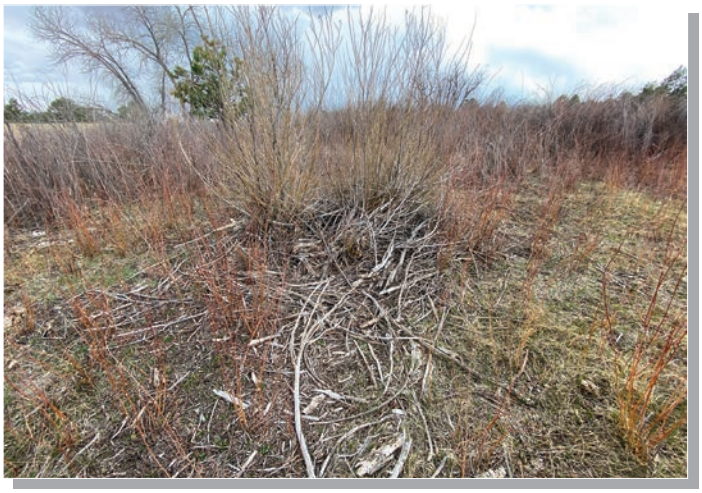

Photo 10b - Riparian corridor in the project area.
View is to the southeast.

Appendix B Routine Wetland Determination Datasheets

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Eagle Rising Subdivision City/County: Black Forest/El Paso County Sampling Date: 5/26/22

Applicant/Owner: Steve Jacobs State: CO Sampling Point: DP1

Investigator(s): C. Marne, R. Beane Section, Township, Range: Section 29, T12S, R65W; 6th PM

Landform (hillslope, terrace, etc.): Old stock pond Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): E Lat: 38.978817 Long: -104.690038 Datum: NAD 83

Soil Map Unit Name: Pring coarse sandy loam, 3 to 8 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Old stock pond. Dry, with no signs of recent retention of water. Area appears to be drying out.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5')			
1. Agrostis gigantea	20	Y	FAC
2. Poa pratensis	20	Y	FAC
3. Cirsium arvense	10	Y	FAC
4. Litter (leaves, pine needles, etc.)	30		
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Mesic vegetation

SOIL

Sampling Point: DP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	organic material	100						
2-11	10YR 3/2	60	7.5YR 4/6	10	C	M	clay loam	
	10YR 2/2	30						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ✓ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indications of recent retention of water.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Eagle Rising Subdivision City/County: Black Forest/El Paso County Sampling Date: 5/26/22

Applicant/Owner: Steve Jacobs State: CO Sampling Point: DP2

Investigator(s): C. Marne, R. Beane Section, Township, Range: Section 29, T12S, R65W; 6th PM

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): E Lat: 38.978432 Long: -104.689572 Datum: NAD 83

Soil Map Unit Name: Pring coarse sandy loam, 3 to 8 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

No signs of recent hydrology. Area appears to be drying out.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5')			
1. Juncus balticus	65	Y	FACW
2. Dry litter (leaves, old vegetation)	35		NI
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: DP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 2/2	100					Clay loam	
6-12	10 YR 2/1	100					Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

No redox features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Only meeting one secondary indicator.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Eagle Rising Subdivision City/County: Black Forest/El Paso County Sampling Date: 5/26/22

Applicant/Owner: Steve Jacobs State: CO Sampling Point: DP3

Investigator(s): C. Marne, R. Beane Section, Township, Range: Section 29, T12S, R65W; 6th PM

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): E Lat: 38.977894 Long: -104.688830 Datum: NAD 83

Soil Map Unit Name: Pring coarse sandy loam, 3 to 8 percent slopes NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

Swale along old tributary, immediately upstream of a culvert.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa woodsii	3	N	FACU
2.			
3.			
4.			
5.			
	3 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Carex nebrascensis	30	Y	OBL
2. Juncus balticus	3	N	FACW
3. Elymus canadensis	5	N	FAC
4. Elymus lanceolatus	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	43 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

Less than 5 percent cover in shrub stratum.

SOIL

Sampling Point: DP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	Organic material							
2-5	10YR 2/2	100					Clay	
5-7	10YR 3/2	95	10YR 3/4	5	C	M	Clay	Distinct redox features
7-10	10YR2/2	100					Clay, gravel	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Dense clay and gravel

Depth (inches): 10

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Two secondary indicators observed.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Eagle Rising Subdivision City/County: Black Forest/El Paso County Sampling Date: 5/26/22

Applicant/Owner: Steve Jacobs State: CO Sampling Point: DP4

Investigator(s): C. Marne, R. Beane Section, Township, Range: Section 29, T12S, R65W; 6th PM

Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): E Lat: 38.977515 Long: -104.687850 Datum: NAD 83

Soil Map Unit Name: Pring coarse sandy loam, 3 to 8 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

Tributary into Cottonwood Creek. Distinct transition to uplands; adjacent uplands are similar to vegetation and conditions observed at DP2.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Salix exigua	10	Y	FACW
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Typha latifolia	60	Y	OBL
2. Phalaris arundicea	10	N	FACW
3. Carex nebrascensis	5	N	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 25

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: DP4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

DP along drainage with inundation. Hydric soils assumed based on dominance of hydrophytic vegetation and presence of hydrology indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 1 inch deep

Water Table Present? Yes ___ No ___ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Flowing water in channel and through wetlands - 1 inch deep

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Eagle Rising Subdivision City/County: Black Forest/El Paso County Sampling Date: 5/26/22

Applicant/Owner: Steve Jacobs State: CO Sampling Point: DP5

Investigator(s): C. Marne, R. Beane Section, Township, Range: Section 29, T12S, R65W; 6th PM

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): E Lat: 38.978432 Long: -104.689572 Datum: NAD 83

Soil Map Unit Name: Pring coarse sandy loam, 3 to 8 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

No signs of recent hydrology. Area appears to be drying out.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Salix ligulifolia	35	Y	FAC
2.			
3.			
4.			
5.			
	35 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Linaria vulgaris	10	Y	UPL
2. Poa pratensis	15	Y	FAC
3. Maianthemum dilatatum	5	N	FAC
4. Verbascum thapsus	10	Y	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	10	x 4 =	40
UPL species	10	x 5 =	50
Column Totals:	75 (A)		255 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: DP5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No soil pit dug due to hard ground. Soils assumed nonhydric due to lack of hydrophytic vegetation and hydrology indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Only meeting one secondary indicator.